

<b>Office Action Summary</b>	<b>Application No.</b> 10/562,012	<b>Applicant(s)</b> FURUSHIMA ET AL.	
	<b>Examiner</b> CHENG-YUAN TSENG	<b>Art Unit</b> 2184	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 4-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

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|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>10/20/2009</u> .                         |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application  |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____.                          |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 8, 2009 has been entered.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen et al. (U.S. Patent 6,850,808),

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hereinafter referred to as Yuen, in view of Beck et al. (U.S. Patent 6,826,432), hereinafter referred to as Beck.

Referring to claim 5, Yuen discloses **a peripheral device for a programmable logic controller** (fig. 2, programmable logic controller 22 with server computers 24), comprising:

**a processor** (fig. 2, processor 26); and

**a memory** (fig. 2, memory 28) storing **software modules** (fig. 2, control program 34; fig. 5, automation desktop), the software modules comprising:

**a search and determination means** (fig. 5, automation desktop; fig. 3, repository 50 for searching by automation desktop; fig. 5, template library 208 used by automation desktop for searching) for searching the instruction table for **an instruction in a code in a portion of a sequence program** (fig. 3, project contains objects, objects contains instructions) selected as diversion data **from an existing diversion-source sequence program** (fig. 3, library 60 of objects), to **determine a corresponding input/output type of a parameter** (fig. 3, determines from control variables of templates 70; col. 5, lines 39-40; note: also see below for determining the control identifier in view of Beck) for the instruction;

**a component data creating means** (fig. 3, wrapper program 90) for **creating a variable data table** (fig. 7, block 326, record new version of template) by replacing the determined corresponding input/output types stored in the search result table with variable names, and for creating **component data** (fig. 6, create compound object 232) by adding the corresponding variable names to variables and to circuit information; and

**a component data diversion means** (fig. 6, system equipment hierarchy) for diverting the component data into **an arbitrary position in a designated sequence program** (fig. 8, Kam & Joe's plant 660).

Yuen does not expressively disclose an instruction table for storing instructions and storing corresponding input/output types of parameters for the instructions; and a search result creating and storing means for creating and storing into a memory a search result table by combining an address in the code in the selected portion of the sequence program, with the determined corresponding input/output type.

However, Beck discloses **an instruction table for storing instructions** (fig. 1, module table 1.10, each module contains multiple instructions) and **storing corresponding input/output types of parameters** (col. 5, lines 56-61, an identifier of input-output type module; the identifier is stored for

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identifying the modules) for the instructions; and **a search result creating and storing means** (col. 14, lines 3-15, analysis means extracts the identifier) for creating and storing into **a memory** (col. 14, lines 3-15, temporarily stores into memory means) **a search result table** (col. 14, lines 3-35, a table extract from instantiation table 4 and configuration table 5) by **combining an address** (col. 14, lines 16-35, replace structural symbolic input-output variables with exact topological address by the determination of analysis means) in the code in the selected portion of the sequence program, with the determined corresponding input/output type.

Yuen and Beck are analogous art because they are from the same field of endeavor in automation application programmable logic controller.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art, having the teaching of Yuen and Beck before him or her to modify the programmable logic controller automation desktop of Yuen to include the module tables of Beck, thereafter the automation application can manipulate data being exchanged between an application program and channels of input-output modules in a symbolic form using module tables (col. 2, lines 16-23).

The suggestion/motivation for doing so would be eliminating the disadvantage of application program depending on the physical location of the modules (col. 2, lines 4-14) as suggested by Beck.

Therefore, it would have been obvious to combine Yuen with Beck to obtain the invention as specified in the instant application claims.

Referring to claims 7 and 13, they recite the corresponding limitations of claim 5 as set forth above. Therefore, they are rejected accordingly.

As to claims 6 and 8, Yuen discloses the peripheral device for the programmable logic controller according to claim 5, further comprising: **a sequence-program-component storing means** (fig. 2, memory 44) for storing into a component storage the created component data as a sequence program component; **a sequence-program-component displaying device** (fig. 1, computer display 25) for displaying the sequence program components stored in the component storage; **a sequence-program-component selecting means** (fig. 4, automation desktop 200) for selecting a desired sequence program component from the sequence program components displayed by the sequence-program-component

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displaying device; and **a sequence-program-component diversion means** (fig. 2, operating system 36) for diverting the selected sequence program component into a new sequence program.

As to claims 9, 10 and 13, Yuen discloses the peripheral device for the programmable logic controller according to claim 5, wherein the input/output types of the parameters for the instructions comprise **an input type, an output type, and an internal type** (col. 3, lines 21-27, programming language variables has read/write/local variables).

As to claims 11-12, Yuen discloses the peripheral device for the programmable logic controller according to claim 5, wherein **a user selects the portion of the sequence program** (fig. 8, automation desktop 600 is a user application) from the existing diversion-source sequence program being displayed.

#### ***Response to Arguments***

4. Applicant's arguments filed on September 8, 2009, regarding the 35 U.S.C. §102 have been fully considered, but they are not deemed to be persuasive, or moot in view of new grounds of rejections.

**Applicant argues that the cited prior art does not discloses "a search and determination means for" (pages 8-9).**

Examiner respectfully disagrees with Applicants, because the claim is considered as an algorithm or software modules executed by controller. Since the claim is considered invoking 35 U.S.C. 112, para. 6, the corresponding structure, material, or acts and equivalent thereof is the disclosed algorithm. In instant application, the software based Automation Desktop of Yuen performs the claimed "means for" functions. The cited Yuen in view of Beck discloses an automation desktop application for searching the programmable logic controller modules and replacing corresponding symbolic variables of each determined module with new binding addresses etc.

### ***Conclusion***

5. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See M.P.E.P 707.05(c).

#### US Patents

- Noda (U.S. Patent 5,920,717) discloses method and apparatus for automated program-generation.
- Coburn et al. (U.S. Patent 6,618,856) discloses simulation method and apparatus for use in enterprise controls.



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6. The examiner requests, in response to this office action, support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line number(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application. When responding to this office action, applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111(c).

In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view the state of the art disclosed by the references cited or the objections made. The applicant or patent owner must also show how the amendments avoid such references or objections.

***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Cheng-Yuan Tseng whose telephone number is (571)272-9772, and fax number is (571)273-9772. The examiner can normally be reached on Monday through Friday from 09:00 to 17:30 Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Henry Tsai can be reached on (571)272-4176. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866)217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800)786-9199 (IN USA OR CANADA) or (571)272-1000.

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/Cheng-Yuan Tseng/

Patent Examiner, AU 2184